

Please replace the paragraph beginning on page 8, line 17, with the following rewritten paragraph:

h2 (Amended) Structurally, the tunable laser is shown laid out along an optical path 208. Coupling optics 212 are positioned between the back facet 226 of the laser 224 and a fiber optic 206. The laser and coupling optics are mounted to the base 260 by individual mounts 222 and 210 respectively. The fiber optic is coupled by ferrule 204 to an optical coupler 202 which is in turn coupled to base 260. The laser amplifier, in an embodiment of the invention, is a conventional Fabry-Perot laser diode. The front and rear facets 228-226 of the laser diode are aligned with the longitudinal axis 208. The front facet has an AR coating with a reflectivity of less than 0.5%. The rear facet in this embodiment includes a partially reflecting dielectric coating. The proximal end of the external cavity is located at the front facet 228 of the laser diode. The distal end of the external cavity is defined by the retroreflector 264. The cavity itself extends from the rear facet of the gain medium to the retroreflector. The retro reflector 264 is coupled to base 260 via mount 262.

Please replace the paragraph beginning on page 10, line 18, with the following rewritten paragraph:

Q3 (Amended) In this embodiment the channel selector includes a gas or solid etalon 252. The etalon includes opposing planar first and second reflectors which are highly reflective, e.g., ( $FSR_{\text{Channel\_Selector}}$ ) differing from that of the grid generator ( $FSR_{\text{Grid\_Gen}}$ ) by an amount corresponding substantially inversely with the number of channels in the wavelength grid. Both free spectral ranges of the grid generator and channel selector are broader than the free spectral range of the cavity ( $FSR_{\text{Cavity}}$ ) (See FIG. 4A-B and FIGS. 5A-C). In an embodiment of the invention, the FSR of the channel selector differs from the FSR of the grid generator by an amount which substantially corresponds to the quotient of the channel spacing and the number of channels in the wavelength grid, e.g., an ITU grid (See FIG. 4A-B and FIGS. 5A-C). Vernier tuning of the channel selector results in a single loss-minimum within the communications band which can be tuned across the grid. The combined feedback to the gain medium from the grid generator together with the channel selector supports lasing at the center

Please replace the paragraph beginning on page 11, line 14, with the following rewritten paragraph:

546 B17 (Amended) The temperature control of the device may include individual temperature control of the grid generator 246, the base 260, and the gain medium 224. The channel tuner and the grid control include logic 254C, 248C for tuning the channel selector 252 and for maintaining the reference characteristics of the grid generator 246 respectively. These modules may be implemented separately or in combination. They may be implemented with open or closed loop feedback of temperature, wavelength, position etc. A single processor with appropriate program code and lookup table(s) may be used to control both the channel tuner and grid control. In an embodiment of the invention the lookup table contains data or formula which correlate wavelength of either/both the channel selector 252 or the grid generator 246 with the control variable(s). In the above discussed embodiment the control variable is temperature. In alternate embodiments of the invention the control variable(s) include: position, rotation, temperature, electrical parameters, electro-optic parameters etc. The lookup table(s) may contain a formula or a plurality of records which correlate the pass band characteristics of either or both the channel selector and the grid generator with a specific control variable, e.g. tuning parameter, appropriate for the manner in which selector / generator is being tuned/regulated. Tuning/regulation may be accomplished by mechanical, electrical or opto-electrical tuning device. Mechanical parameters include positions of the channel selector, (See FIG. 3A).

Please replace the paragraph beginning on page 23, line 3, with the following rewritten paragraph:

546 B20 (Amended) FIG. 9 is a block diagram of an alternate embodiment of the vernier tuned filter as part of a wavelength locker. A optical beam source 900 is shown emitting an output beam 904. That beam may include a number of channels each centered on a corresponding gridline of a selected wavelength grid. That beam passes through a beam splitter 910 to generate an output beam 906 and a reference beam 908. The reference beam passes through a first photodetector 920 and a second photodetector 922. Between the first and second photodetectors is positioned the vernier tuned filter generally 290. That filter is tuned in the above discussed manner to a selected wavelength at which to measure one or more of the input wavelengths of the beam. The drift of the output wavelength of the